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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,011	06/25/2003	Keitaro Suzuki	239312US0 DIV	2431

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EXAMINER

METZMAIER, DANIEL S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/603,011

Applicant(s)

SUZUKI ET AL.

Examiner

Daniel S. Metzmaier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 10-18 are pending.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 10-18 are rejected under 35 U.S.C. 103(a) as obvious over Nissan Chemical Ind., Ltd, WO/39253, as evidenced by Watanabe et al, US 6,296,943.

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Watanabe et al '943 is a patent family member of Nissan Chemical and is used as translation evidence of the Nissan Chemical disclosure. The citations refer to those set forth in Watanabe et al '943, the disclosure which is considered to be the same or substantially the same in the Nissan Chemical reference.

The claims define an optical substrate with a cured film defined by the coating composition employed to coat said substrate. Said claims are deemed to be in product-by-process format and patentability is evaluated based on product-by-process format. The process limitations in product-by-process claims are only given patentable weight to the extent said process limitations would necessarily impart a patentable limitation to the resulting product. See MPEP 2113.

Nissan Chemical (column 5, lines 4 et seq) discloses optical elements derived from mixtures of (A) and (B) reading on the claimed compositions when viewed as a whole. Nissan Chemical (column 18, lines 1-13) discloses the hydrolysis of the components (A) and (B) are carried out in acidic media. Nissan Chemical (column 20, lines 40 et seq) discloses the addition of curing catalyst comprising organic acid salts and alkoxides of aluminum, zirconium or titanium. Preferred are the acetylacetoates of aluminum. Said salts or alkoxides in acid media would have been expected to have formed colloidal acidic oxides via at least some hydrolysis and condensation of the salts and/or alkoxides and would have coated the particles previously set forth as (B).

Nissan Chemical (column 21, lines 9-14) further teaches the coatings may further contain the specific metal oxide particles so as to conform to the refractive index of various optical elements and include aluminum oxide, titanium oxide, antimony oxide,

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zirconium oxide, silicon oxide, cerium oxide, etc. Nissan Chemical (column 13, lines 19-27; column 20, lines 64-67) clearly further discloses the use of alkylamines.

Nissan Chemical (column 21, lines 60 et seq) further discloses the further coating the optical elements with an anti-reflective coating in a multilayer film.

To the extent the optical elements claimed differ as not disclosed with sufficient specificity in the Nissan Chemical reference, it would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to make optical elements within the teachings of the Nissan Chemical reference employing the disclosed additives for their disclosed advantageous additive properties taught in the Nissan Chemical reference.

5. Claims 10-13 and 16-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nissan Chemical Ind., Ltd, EP 0 909 784. Nissan Chemical '784 (abstract; column 3, lines 54 et seq; column 6, lines 13 et seq; column 11, lines 23 et seq; examples; and claims) discloses compositions for treating optical components comprising an anhydrous zinc antimonite sol.

Nissan Chemical '784 (column 3, lines 54 et seq; paragraph [0012]) discloses the zinc compound include zinc salts, hydroxide, and zinc oxides alone or in combination and having a primary particle size of less than 500 nm. Nissan Chemical '784 (column 4, lines 33-38) discloses the antimony sols are acidic sols having a primary particle size of 2 to 200 nm. Nissan Chemical '784 (column 5, lines 47 et seq) discloses the zinc

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antimonite have a particle size of 5 to 500 nm. Said particle size encompasses the particle size claimed.

To the extent the Nissan Chemical '784 differs from the claims in that the particle size is not defined with sufficient specificity, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to vary the particle size with the range disclosed in the Nissan Chemical '784 reference.

Response to Arguments

6. Applicant's arguments filed November 8, 2005 have been fully considered but they are not persuasive.

7. Applicants (page 4 of the above noted response) assert Watanabe et al '253 lacks a disclosure of sols having an acidic oxide coating. This has not been deemed persuasive for the following reasons.

Initially, Watanabe et al '253 teaches composite primary sol particles comprising tin oxide, SnOx. The claims do not define or limit the degree of coating, e.g., partial, degree thereof, or complete. The surface of the primary composite particles would be expected to have exposed species of the components of said composite including tin and tin oxide groups. Said groups would have been expected to be in an equilibrium state having acidic and basic groups at or around the isoelectric point (IEP) of the composite materials. Below said IEP the materials exhibit a net positive charge and above the IEP a net negative charge. Said materials are characterized at a pH of about 7 or a slightly alkaline environment wherein alkylamines may be employed as the base. Said composite materials would be expected to have some acidic oxide at the surface.

Furthermore, Watanabe et al '253 (column 21, lines 9-14) specifically discloses the further addition of fine particulate metal oxides including aluminum oxide, antimony oxide, and cerium oxide among a total of six oxide species disclosed.

Watanabe et al '253 characterizes "fine" (column 1, lines 40-45) in the prior art background as 1 to 300 nm and (column 8, lines 20-27) in terms of the patented invention as 2-20 nm, which criticality of the particle size is disclosed. Watanabe et al '253 (column 8, lines 24-27) teaches particles larger than 20 nm decreases the transparency, which is undesirable. The terms "fine particle" as disclosed in Watanabe et al '253 would clearly lead one skilled in the art to particles having 1-20 nm, which reads on the claimed coating particles.

Watanabe et al '253 (examples) further discloses primary particles of 4-8 nm in a slight alkaline pH. Watanabe et al '253 (column 13, lines 19-27; and column 20, lines 64-67) further teach the addition of allyl amine and ethylamine (alkylamine) as bases.

While Watanabe et al '253 does not explicitly characterize the sol particles as coated with acidic oxides, the addition of at least the antimony and aluminum oxides under the disclosed near neutral/alkaline conditions, would have resulted in at least partial coating of the composite oxides.

Furthermore, the addition of antimony oxide would have been advantageous for the purpose of modifying the refractive index properties of the composition as taught in the Watanabe et al '253 reference. Under near neutral / alkaline conditions, the further addition of the antimony oxide or aluminum oxide would have resulted in surface acidic oxides.

8. Applicants (page 4) assert the specification as Comparative Example 3 describes the use of sols produced in the Watanabe et al '253 reference¹. Said Comparative Example 3 admittedly does not show coatings that are practically inferior but only slightly different. Said data is consistent with the conclusion that some acidic oxide surface groups would be expected for the composite oxide materials. Also, said data does not rebut the rejection based on the facts that Watanabe et al '253 clearly discloses the addition of fine particles of antimony oxide and that said fine particles would have been attracted to the basic surface groups of the composite oxide particles.

9. Applicants (page 5) assert Watanabe et al '253 does not disclose or suggest the colloidal particles with an acidic oxide coating. This has been addressed above. Applicants assert the examiner's conclusion that composite oxides of Watanabe et al '253 would have resulted in acidic oxide surface groups to be incorrect. This has not been deemed persuasive since acid and basic surface groups would have been present at or around the isoelectric point of the composite oxide material. The materials are at a near neutral / slightly alkaline pH and one skilled in the art at the time of the invention would have expected some basic and some acidic surface groups. Said materials are consistent with the Comparative example 3 of the specification, which results in substantially indistinguishable results to materials that are further coated.

10. Applicants (page 5) assert Watanabe et al '784 lacks a disclosure or suggestion of coating the ZnSbOx. Applicants further assert the Watanabe et al '784 sols are formed by merely mixing zinc salts and antimony oxide. This has not been deemed

¹ Examiner notes that Comparative Example 3 is absent the further addition of antimony oxide or

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persuasive since Watanabe et al '784 (column 3, line 56; column 4, lines 5 et seq; and examples) disclose the use of zinc oxide and hydrous zinc oxide. The claims do not distinguish on the term coating since the Watanabe et al '784 reads on at least a partial coating of the zinc oxide and hydrous zinc oxide.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Daniel S. Metzmaier
Primary Examiner
Art Unit 1712

DSM